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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,763	01/08/2001	Roy Greeff	MI40-321	8690

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EXAMINER

NGUYEN, DUC M

ART UNIT	PAPER NUMBER
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2682

DATE MAILED: 11/19/2002

11

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/757,763

Applicant(s)

Greeff et al

Examiner

Duc Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Aug 26, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 53-108 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 105, 106, and 108 is/are allowed.
- 6) ☒ Claim(s) 53-67, 69-104, and 107 is/are rejected.
- 7) ☒ Claim(s) 68 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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**DETAILED ACTION**

This action is in response to applicant's response filed on 8/26/02. Claims 53-108 are now pending in the present application.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 53-63, 70-82, 89-92, 94-100, 102 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As to claims 53, 60, 70, 77, 94, 102, the claims recite the limitation of reducing the amplitude of a component prior to demodulation of the modulated continuous wave signal.

However, according to the specification (see page 21, line 17 - page 22, line 14), the reducing of the amplitude of a component of the modulated continuous wave signal can be achieved only after the summing of the modulated continuous wave signal with the local continuous wave signal. Therefore, the above limitation is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims **83-84, 86-88, 104** are rejected under 35 U.S.C. 102(b) as being anticipated by **Kenworthy** (US Patent Number **5,691,978**).

Regarding claim **83**, **Kenworthy** discloses a self-cancelling full-duplex RF communication system for cancelling an interference signal caused by near-field reflection of the transmitted signal which would includes all the claimed limitations (see Figs. 1-2, col. 2, line 32 - col. 3, line 34), wherein the transmitted signal would read on the "local signal" as claimed, the receive signal would read on a "communication signal" as claimed, the subtraction of self transmitted signal from the receive signal would read on "reducing an amplitude of a first component of the communication signal" as claimed.

Regarding claim **84**, the claim is rejected for the same reason as set forth in claim **83** above. In addition, since **Kenworthy** discloses an analog RF canceler, it is clear that the signals are continuous signals as claimed.

Regarding claims **86, 88**, the claims are rejected for the same reason as set forth in claim

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**83** above. In addition, **Kenworthy** discloses the step of matching amplitude and phase and summing as claimed (see Fig. 2, col. 3, lines 28-34).

Regarding claim **87**, the claim is rejected for the same reason as set forth in claim **86** above. In addition, **Kenworthy** discloses the adjusting is performed before receiving the data portion (baseband signal) as claimed (see Fig. 1).

Regarding claim **104**, the claim is rejected for the same reason as set forth in claim **86** above. In addition, since **Kenworthy** discloses a self-cancelling full-duplex RF communication system for cancelling an interference (self-transmitted) signal caused by near-field reflection of the transmitted signal, it is clear that the system is a coherent backscatter system.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims **64-67, 69, 83-87, 93, 101** are rejected under 35 U.S.C. 103(a) as being unpatentable by **MacLellan et al** (US Patent Number **5,649,296**) in view of **Nysen et al** (US Patent Number **4,725,841**).

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Regarding claims **64-67, 69, 83-85, 87, 103, MacLellan** discloses a wireless communication using modulated backscatter technology, wherein a mixer is used for down converting and demodulating the IF signal of the subcarrier from the return signal (see **Fig. 2 and col. 4, line 34 - col. 5, line 13**). Since it would have been obvious to one of ordinary skill in the art that the mixer produces a signal having frequencies  $(f_2 - f_1)$  and  $(f_2 + f_1)$  when mixing with the local continuous wave signal, hence, **with the broadest reasonable interpretation**, the filtering process (or frequency conversion) for filtering carrier frequency of CW signals would read on the claimed limitation of “reducing an amplitude of a component of the modulated continuous wave signal having a frequency of the continuous wave signal” and the output signal having frequencies (i.e,  $f_2 - f_1$ ) would read on the claimed limitation of “maintaining an amplitude of another component of the modulated continuous wave signal having another frequency”.

However, **MacLellan** fails to disclose adjusting at least one of an amplitude and a phase of the continuous wave signal. However, in an analogous art, **Nysen** discloses a frequency conversion wherein a local signal and a communication reply signal are modified by circuit elements 28 and 30 before being inputted to the mixer, these circuit element may change amplitude or phase of the local signal or the reply signal (see **Fig. 1, col. 5, lines 26-40**), and this would read on “adjusting at least one of an amplitude and a phase of the continuous wave signal”. Here, although **Nysen** fails to disclose the local signal is adjusted in responsive to the communication reply signal, it would have been obvious to one of ordinary skill in the art of signal processing to **scale** (adjust) the amplitudes of these two signals before mixing them at the mixer to prevent a

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large amplitude of one signal would dominate a small amplitude of the other signal, for improving output results. Therefore, it would have been obvious to one of ordinary skill in the art to provide the above teaching of **Nysen** to **MacLellan** for scaling (adjusting) the local signal responsive to the reply signal before processing so that a better result can be achieved.

Regarding claims **66, 86**, the claims are rejected for the same reason as set forth in claim **64** above, wherein **Nysen** as **MacLellan** as modified would disclose adjusting an amplitude of the local signal.

Regarding claim **67**, the claim is rejected for the same reason as set forth in claim **64** above, wherein **Nysen** as **MacLellan** as modified would disclose matching the amplitude of the local signal with the amplitude of the communication reply signal (**scaling** process).

Regarding claims **93, 101**, the claims are rejected for the same reason as set forth in claim **64** above. In addition, since the filtering process rarely filter out any component completely to be exactly zero value as intended for an idealistic case, hence, the filtered out component still have some very small non-zero values in realistic. Therefore, the claimed limitations are made obvious by **MacLellan** in an non-ideal situation case.

7. Claim **107** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Kenworthy**.

Regarding claim **107**, the claim is rejected for the same reason as set forth in claim **104** above. In addition, since **Kenworthy** discusses a two-way RF communication system for two transceivers (see col. 1, lines 13-21), it would have been obvious that one of transceivers

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transmits a communication signal after receiving a communication signal from the other. Here, with the broadest reasonable interpretation, the above process would read on the limitation “communicating a modulated continuous wave signal responsive to the continuous wave signal using a communication device” as claimed. Therefore, the claimed limitations are made obvious by **Kenworthy**, for exchanging signals in responsive to a receiving signal.

*Allowable Subject Matter*

8. Claim **68** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims **105-106, 108** are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter:

As to claims **68, 105-106, 108**, the cited prior arts fail to disclose or made it obvious a method for an interrogator wherein the receiver is configured to reduce the amplitude of a frequency component of the modulated continuous wave signal by adjusting the amplitude and phase of the local continuous wave signal to provide an adjusted continuous wave signal and sum the adjusted continuous wave signal with the modulated continuous wave signal.

*Response to Arguments*



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11. Applicant's arguments filed 8/26/02 have been fully considered but they are not persuasive.

With respect to the 35 U.S.C 112, first paragraph, in response to Applicant's arguments that the specification supports the limitations of "reducing the amplitude prior demodulation of the modulated continuous signal", it is noted that, as recited by Applicant, Figs 5-7 and paragraphs in page 18, lines 5-11, and page 19, lines 8-16, the RF section 74 is used for reducing the amplitude of the return link communication. However, the RF section 74 uses the adaptive canceler 97 in Fig. 6 to perform the step of reducing the amplitude of the return link communication, since the adaptive canceler 97 utilizes the local continuous wave signal received from transmitter 90 and coupler 91 to reduce the amplitude of the return link communication signal, this return link signal is no longer considered as the modulated continuous wave signal as recited in the claims, wherein the modulated continuous wave signal is the output signal produced by a communication device (i.e, the transponder) and is transmitted back to the interrogator. Otherwise, based on the Applicant's argument, the output signal 209 at the mixer 208 in Fig. 2 of **MacLellan**'s reference would read on the "modulated continuous wave signal", and the subcarrier demodulator 212 would read on the I-Q demodulator, and the rejection under 35 U.S.C 103 for the above claim 64 could be applied to claims 53, 60, 70, 77, 94, 102 as well. Therefore, Applicant's arguments that the specification supports the limitations of "reducing the amplitude prior demodulation of the modulated continuous signal" is not persuasive.

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As to Applicant's arguments regarding the limitation of adjusting the local signal responsive to a communication signal in claim 64, it is noted that although **Nysen** fails to disclose the local signal is adjusted in responsive to the communication reply signal, it would have been obvious to one of ordinary skill in the art of signal processing to scale (adjust) the amplitudes of these two signals before mixing them at the mixer to prevent a large amplitude of one signal would dominate a small amplitude of the other signal, for improving output results. Therefore, the examiner believes that the claimed limitations are made obvious by **Nysen** and **MacLellan** for scaling (or adjusting) the local signal responsive to the reply signal before processing so that a better result can be achieved.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves **or** in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, since **Nysen** and **MacLellan** both disclose an interrogator and a transponder using a heterodyne mixer, the combination is proper, wherein in the knowledge generally available to one of ordinary skill in the art of signal processing, by scaling the local signal responsive to the reply signal before processing at the mixer, a better result could be achieved for preventing a large amplitude of one signal dominating a small amplitude of the other signal.

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As to Applicant's arguments regarding the backscattered signal, it is noted that the meanings of a backscattered signal or a reply signal are interchangeable in an interrogator/transponder system.

As to Applicant's arguments regarding claim 67, the "scaling process" as mentioned in claim 64 above would read on the "matching" as claimed.

As to Applicant's arguments regarding the statement of reason for the allowable subject matters, the examiner has restated his statement.

For foregoing reasons, the examiner believes that the pending claims are not allowable over the cited prior art.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- **Giuli** (US Patent Number 4,544,926), Adaptive jamming-signal canceller for radar receiver.

- **Monzello** (US Patent Number 5,584,065), Interference cancellation system employing an I/Q quadrature rotator.

13. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Serial Number: 09/757,763

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**or faxed to:**

(703) 872-9314 (for formal communications intended for entry)

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication or communications from the examiner  
should be directed to Duc Nguyen whose telephone number is (703) 306-4531.

Any inquiry of a general nature or relating to the status of this application should be  
directed to the Group receptionist whose telephone number is (703) 305-3900.

Duc Nguyen



Nov 15, 2002